



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant of:

KUSUMOTO et al.

Serial No.: 10/068,094

Group Art Unit: 2871

Filed: February 5, 2002

Examiner: DUONG, THOI V

Title: POLARIZING FILM POLARIZING PLATE AND LIQUID CRYSTAL DISPLAY

DECLARATION UNDER RULE 132

Honorable Commissioner of
Patent and Trademarks
Washington, D.C. 20231

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TECHNICAL STAFF 2830

Sir:

I, Seiichi KUSUMOTO, a citizen of Japan and residing at
1-1-2 Shimohozumi, Ibaraki-shi, Osaka, Japan, c/o: NITTO DENKO Co., declare and Say
as follows:

1. I was graduated from the course in chemistry, Faculty of Engineering, Gunma University in 1995.
2. Since 1995 to the present time, I have been employed by NITTO DENKO Co, and participate in the research and development of the Polarizing film Polarizing plate and Liquid crystal display.
3. I am one of the inventors of the above-identified application and am familiar with the subject matter thereof.
4. I have read the Official Action mailed and the references cited therein and a familiar with the subject matter thereof.

5. Object of Experiments:

To measure the absorption peak A in a wavelength range of 550 to 650 nm and the absorption peak B in a wavelength range of 450 to 520 nm when the polarizing film, which is described in KITAURA et al (USPN5087985), is arranged in a crossed Nicol configuration.

And confirm that the absorption peak A is not recognized at the polarizing film in KITAURA.

6. Contents of Experiments:

(6-1) Experiment 1(following up experiment of the example 2, USPN5087985)

Preparation of polarizing film (polarizer)

An unstretched polyvinyl alcohol film 50 μm thick was uniaxially stretched to 4.8 times its original length in the longitudinal direction at a temperature of 130.degree. C., then dipped in an aqueous solution containing 0.3 wt % iodine and 20 wt % potassium iodide at 35.degree. C. for 15 seconds, and subsequently dipped in an aqueous solution containing 10 wt % boric acid and 20 wt % potassium iodide at 65.degree. C. for 60 seconds, followed by drying at 70.degree. C. for 60 seconds to obtain a film containing polyiodines formed. Then, ultraviolet light was radiated to this film at a rate of 10 mj/cm.^{sup.2} by means of a mercury vapor lamp to cut polyiodines into a lower order. Further, the film was dipped in a 20 wt % aqueous potassium iodide solution and then heat-treated at 180.degree. C. for 30 seconds to obtain a polarizer having three absorption bands in the ultraviolet region of 210 to 400 nm and having a parameter of ultraviolet absorption characteristics (UA value) of 5.2. An 80 μm thick cellulose triacetate film was laminated to both sides of the polarizer, using a polyvinyl alcohol adhesive, to obtain a polarizer for visible light having an average visible light transmittance (VT value) of 42.5%.

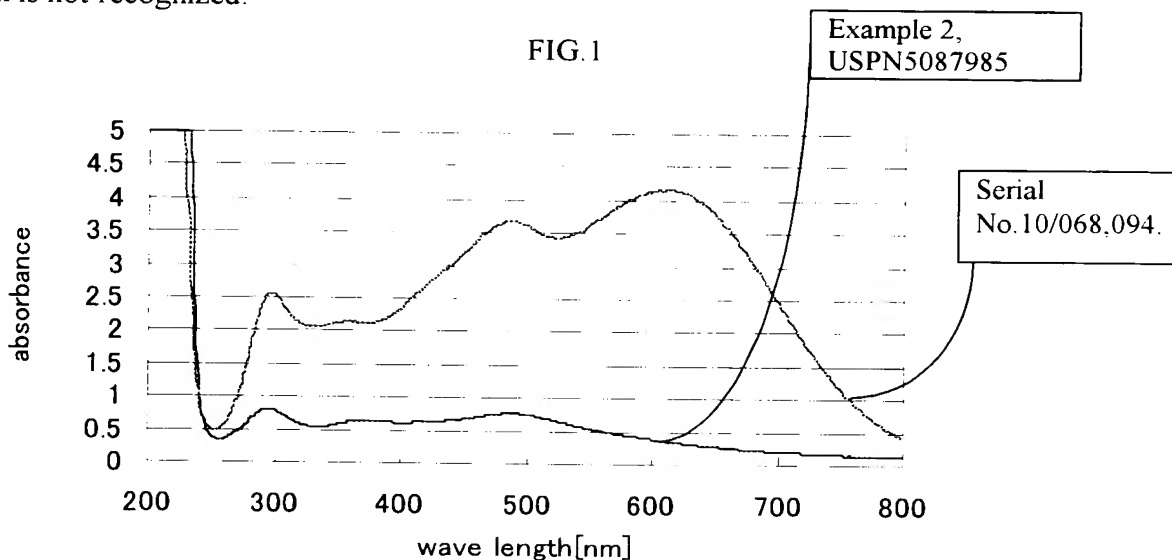
(6-2) Preparation of polarizing plate

A triactylcellulose film was adhered on both sides of the polarizing film through a polyvinyl alcohol derived adhesive layer, and a polarizing plate with a thickness of about 180 μm was obtained.

7. Results of Experiments:

(7-1) Measurement of absorbance characteristic

The above polarizing plate was arranged in a crossed Nicol configuration, and an absorbance was measured with a spectrophotometer (made by Shimadzu Corporation), as same as the method described of Serial No.10/068,094. The absorbance spectrum was shown in FIG.1. Shown Fig.1 the absorption peak A in a wavelength range of 550 to 650 nm is not recognized.



(7-2)Evaluation examination

Two of polarizing plates obtained were adhered so that absorption axis may be configured parallel (for white display) or orthogonal (for black display). Visual observation of the transmitted light or reflected light was carried out, and white and black display index were investigated, as same as the method described of Serial No.10/068,094.

Results are shown in the following table. In addition, evaluation is based on the criteria, as same as the method described of Serial No.: 10/068,094.

	KITAURA:USPN5087985
White display index	Excellent
Black display index	Failure

8. I confirm that the absorption peak A is not recognized at the polarizing film in KITAURA. And the polarizing film in KITAURA was much worse than the present invention in optical properties.

9. I declare further that all statements made herein of my own knowledge are true, and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

this 22 day of August , 2003

Robert K. ...